Claims 1-11, 13-37, and 39-97 are rejected in the June 3 Office Action. For at least the reasons set forth below, applicants respectfully submit that all of claims 1-11, 13-37, and 39-97 define patentable subject matter.

I. Rejection

Page 2 of the Office Action rejects claims 1-11, 13-37, and 39-97 under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent 6,254,772 to Chau in view of U.S. Patent 6,068,764 to Chau. The rejection is respectfully traversed.

Page 2 of the Office Action specifically points to the abstract of the '772 patent, column 4, lines 50-57; column 5, line 63 - column 6, line 32; column 6, lines 47-56; and column 6, line 66 - column 8, line 16, as well as elements 10, 30, 48, 82, 84, 86, 88, 90, and 92 of the '772 patent. Page 2 of the Office Action also specifically points to the abstract of the '764 patent, column 3, lines 9-20; column 3, line 67 – column 4, line 23; and column 4, line 43 – column 7, line 20.

Page 2 of the Office Action asserts that the '772 patent discloses a control apparatus for a fluid filtration system for removing contaminants from a supply of fluid comprising a tank having an interior, a fluid inlet into the interior, a diffuser between the fluid inlet and the interior, a fluid outlet from the interior, and a bleed-off tube. The Office Action asserts that the '772 patent discloses a plurality of valves (allegedly, the first to sixth valves) operated via an actuator, where the controllable actuator is operable to repeatedly switch between first and second states. The Office Action acknowledges that the '772 patent does not disclose a pressure-controlled valve. The Office Action asserts that the '764 patent discloses valves that can be controlled via pressure.

The Office Action alleges that it would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide valves operated by pressure as taught by the '764 patent in the filtration apparatus disclosed in the '772 patent. As motivation, the Office Action asserts that it is well known in the art that fluid pressure is sufficient to adequately permit operation of valves to control a fluid filtration system. Applicants respectfully submit that the Office Action has misapplied these teachings of the '772 and '764 patents to the rejected claims.

The '772 patent discloses a backwashable filtration system using a manually rotatable control valve 58 having three positions: a first, or service, position; a second, or rinse, position; and a third, or backwash, position. The '772 patent also discloses that the manually rotatable control valve 58 has three distinct valve portions 108, 104, and 112 that are fluidly isolated from each other and their environment by circumferential O-rings 100, 101, 102, and 118. It should be appreciated that the three valve portions 108, 104, and 112, while all part of a unitary, integral valve body 58 and not physically separated, are functionally separated because they are fluidly isolated.

As disclosed in the '772 patent, when the manually rotatable control valve 58 is in the first, or service, position, the first portion 108 of the manually rotatable control valve 58 connects a port 84 to a discharge port 86 via a circumferential passage 110, while simultaneously disconnecting a port 76 from the port 84. The second portion 104 of the manually rotatable control valve 58 isolates a port 94 using a blind seal 130 and isolates a port 98 using a blind seal 128, disconnecting the ports 94 and 98 from a circumferential passage 106. The second portion 104 also connects an interior passage 70 to a riser 30 via a port 72 and a port 82 while simultaneously disconnecting a port 74 from the port 82. The third portion 112 of the manually

rotatable control valve 58 isolates a port 90 using a blind seal 124 and isolates a port 92 using a blind seal 126.

As a consequence, when the manually rotatable control valve 58 is in the first, or service, position, unfiltered source water passes from a nipple 116 through the interior passage 70, the ports 72 and 82, and upwardly through the riser 30. The water is then discharged from the top of the riser 30 onto a fine mesh 36, which filters particulate contaminants. The water passes through the mesh 36, perforations 20, and a floor 18 of a top piece 34. The water then flows serially through filtration media A, B, C, and D in chambers 21 of respective containers 12, 13, 14, and 15. Treated water continues to flow downwardly through a mesh 54, which removes any remaining super-fine particulates. Treated water continues through perforations 52 in a floor plate 48, the port 84, around the first portion 108 of the valve body via the circumferential passage 110, and out the discharge port 86.

In contrast, when the manually rotatable control valve 58 is in the second, or rinse, position, the first portion 108 of the manually rotatable control valve 58 isolates the port 84 using a blind seal 136, disconnecting the port 84 from the circumferential passage 110 and the discharge port 86 and from the port 76. The second portion 104 of the manually rotatable control valve 58 connects the interior passage 70 to the riser 30 through the ports 74 and 82 while simultaneously disconnecting the port 72 from the port 82, rotates the blind seal 128 away from the port 98 to connect an overflow conduit 97 to a drain port 88 via the port 98 and the circumferential passage 106, and rotates the blind seal 130 away from the port 94 to connect the port 94 to the drain port 88 via the circumferential passage 106. The third portion 112 of the manually rotatable control valve 58 connects a port 78 to the port 90 and isolates the port 92 using a blind seal 134.

As a consequence, when the manually rotatable control valve 58 is in the second, or rinse, position, unfiltered source water passes from the nipple 116 through the interior passage 70, the ports 74 and 82, and upwardly through the riser 30. The water then travels downwardly through the media A, B, C, and D in the chambers 21 of the respective containers 12, 13, 14, and 15, flushing the media. The water flushes any fine particles that have collected on the mesh 54 and continues along with any accumulated fine particles through the port 94 to the drain port 88, via the circumferential passage 106. Unfiltered source water also passes from the nipple 116 through the interior passage 70 and the ports 78 and 90 to the container 96, allowing the container 96 to fill with water to produce liquid to regenerate an ion exchange medium. Overflow from the container 96 is discharged to the drain port 88 via the overflow conduit 97 and the circumferential passage 106.

In contrast to both the service and rinse positions, when the manually rotatable control valve 58 is in the third, or backwash, position, the first portion 108 of the manually rotatable control valve 58 connects the interior passage 70 to the ports 76 and 84, while simultaneously disconnecting the port 84 from the circumferential passage 110 and the discharge port 86. The second portion 104 of the manually rotatable control valve 58 isolates the port 94 using a blind seal 142 and isolates the port 98 using a blind seal 146, disconnecting the ports 94 and 98 from the circumferential passage 106 and the drain port 88, and unblocks the port 82. The third portion 112 of the manually rotatable control valve 58 isolates the port 90 using a blind seal 144, disconnecting the port 90 from the port 78, and connects the container 96 to the bottom side of the water treating media via the port 92, a port 80, and the interior passage 70.

As a consequence, when the manually rotatable control valve 58 is in the third, or backwash, position, unfiltered source water from the nipple 116 and regenerating fluid from the

container 96, via the ports 92 and 80, pass through the interior passage 70, the ports 76 and 84, and the filtration media D, C, B, and A in chambers 21 of respective containers 15, 14, 13, and 12, respectively, in reverse direction, backwashing the filtration media. The backwashing liquid continues downwardly through the riser 30, the port 82, the circumferential passage 106, and is discharged out the drain port 88.

The '764 patent discloses a pressure-actuated linearly translatable shutoff valve comprising a piston 78 positioned in a compartment 38. The piston 78 is slightly biased in a flow-blocking direction between an inlet 74 and a discharge outlet 76 by a spring 80, which may exert a force of, for example, about 5 psi against the piston 78 in the flow-blocking direction. If only the force of the spring 80 is exerted against the piston 78, it will be insufficient to hold the piston 78 in its flow-blocking condition against the normal incoming unfiltered water pressure of, for example, 40-60 psi, and that incoming unfiltered water pressure will force the piston 78 out of the flow-blocking position and maintain it out of the flow-blocking relationship between the inlet 74 and the discharge outlet 76.

When enough filtered water has been produced to fill a tank 30, the pressure in fluid discharges 67 and 68 will rise to approach the pressure of the incoming unfiltered water. This additional pressure will be exerted in the flow-blocking direction of the piston 78. When this pressure, together with the force exerted by the spring 80, exceeds the pressure of the incoming unfiltered water, the piston 78 will move to block the flow between the inlet 74 and the discharge outlet 76.

Applicants acknowledge that the '764 patent discloses a linearly translatable valve that is controlled via pressure. However, in contrast, the '772 patent discloses a manually operated valve that is rotatable, not linearly translatable. The '764 patent provides no teaching, disclosure,

or suggestion with respect to a rotatable valve or how one of ordinary skill in the art would use pressure to actuate a rotatable valve or how to control where such pressure would be applied to such a rotatable valve. Furthermore, the '772 patent provides no teaching, disclosure, or suggestion that the pressure of the fluid generates any torque acting on the rotatable valve, which would be necessary to actuate a rotatable valve. Neither of the cited references provides any teaching, disclosure, or suggestion on how one would transform the manually-operated rotatable valve 58 disclosed in the '772 patent into a pressure-controlled rotatable valve, nor is there any evidence that such a transformation would be obvious to one of ordinary skill in the art. Furthermore, there is no teaching, disclosure, or suggestion as to how one of ordinary skill in the art would use a linearly translatable valve in the '772 patent. Because the '764 patent provides no teaching, disclosure, or suggestion with respect to using pressure to actuate a rotatable valve and the '772 patent provides no teaching, disclosure, or suggestion with respect to using linearly translatable valves, the '772 and '764 patents are not properly combinable.

Even when disregarding the fact that the '772 and '764 patents are not properly combinable, one of ordinary skill in the art would have no reason to apply the teachings of the '764 patent to the '772 patent, nor would one of ordinary skill in the art find any value in doing so. The '772 patent discloses a rotatable control valve 58 that is manually operated by the user. Even if one were able to transform the manually rotatable control valve 58 into a pressure-actuated control valve, there is no control system in the '772 patent that would determine when the control valve should be actuated. There is no obvious way of making the valve in the '772 patent self-actuating without providing a control system.

Looking beyond the fact that the manually rotatable control valve 58 disclosed in the '772 patent is not pressure-actuated and there is no obvious way to convert such a manually

rotatable control valve 58 to a pressure-actuated control valve, there are other significant structural differences that prevent the asserted combination of the '772 and '764 patents from rendering obvious the subject matter of any of the rejected claims.

As outlined above, the '772 patent discloses one valve and exactly one valve. While quite complicated, the valve disclosed in the '772 patent comprises multiple ports that are connected, disconnected, isolated, or unblocked simultaneously through a single action—an externally obtained rotation of the manually rotatable control valve 58. Despite the fact that there is no teaching, disclosure, or suggestion as to how one could apply the teachings of the '764 patent to the '772 patent, even if the manually rotatable control valve 58 disclosed in the '772 patent could be rendered pressure actuated, were one to use pressure to actuate the manually rotatable control valve 58, all of the different ports would be connected, disconnected, isolated, or unblocked simultaneously. In contrast, claims 1, 9, 13, 45, and 67 recite two valves that can be actuated in sequence or independently of each other. Claims 74 and 86 recite three valves that can be actuated in sequence or independently of each other. Claims 1, 9, 13, 45, 67, 74, and 86 do not recite that a second valve moves because it is physically connected to the first valve. Instead, claim 1 recites, "the second valve being displaced by gas pressure from the source of compressed oxidizing gas to a first position." Claims 9, 13, 45, 67, 74, and 86 use similar, but not identical, language, similarly reciting that a valve corresponding to the second valve set forth in claim 1 is actuated by gas pressure. Though the language varies, claims 1, 9, 13, 45, 67, 74, and 86 each recite a valve that is operated not by a physical connection to another valve, but rather by gas pressure.

In the '772 patent, as demonstrated, the manually rotatable control valve 58 causes a plurality of passages to communicate with others. In each position, a certain set of passages

communicates with another set of passages depending on the position of the manually rotatable control valve 58. When the manually rotatable control valve 58 is actuated, all passage connections and disconnections occur simultaneously. The connections and disconnections are effected solely because of the actuation of the manually rotatable control valve 58 and not as a consequence of the other connections and disconnections. In the manually rotatable control valve 58 disclosed in the '772 patent, passages cannot be independently selected for communication with other passages, ports, or the like.

Applicants respectfully note that every Office Action must create a reviewable record. The claims define various specific modes of operation of specific valves with conditions precedent to their operation. The Office Action fails to specify how the single valve disclosed in the '772 patent corresponds to the first and second valves recited in claims 1, 9, 13, 45, and 67 and the first, second, and third valves recited in claims 74 and 86. The Office Action also fails to specify where the first or second valves and the operative connections between these valves recited in claims 1, 9, 13, 45, and 67 are found in the single valve 58 disclosed in the '772 patent. The Office Action furthermore fails to specify where the first, second, or third valves and the operative connections between these valves recited in claims 74 and 86 are found in the single valve 58 disclosed in the '772 patent. The Office Action additionally fails to identify the specific features added in the rejected dependent claims and fails to identify where in the '772 or '764 patents those features are taught, disclosed, or suggested. The Office Action also fails to demonstrate where motivation can be found for combining teachings of the '772 and '764 patents for the features recited in claims 1, 9, 13, 45, 67, 74, and 86 or for any of the additional features recited in the rejected dependent claims. The Office Action thus fails to present a prima facie case of anticipation or obviousness of the rejected claims. Absent a discussion of why the

'772 patent, in light of the '764 patent, makes the present disclosures obvious, no reviewable record is created.

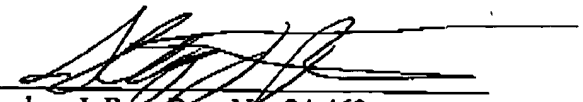
Consequently, the Office Action violates the substantive and procedural due process which the Office is required to accord applicants via the Administrative Procedures Act. See, in this regard, In re Zurko, 119 S.Ct. 1816, 50 U.S.P.Q. 2d 1930 (1999), and In re Gartside, 53 U.S.P.Q. 2d 1796 (Fed. Cir. 2000). That is, because the Office Action neither establishes a prima facie case of obviousness nor a reviewable record upon which the Board can determine the sufficiency and appropriateness of the grounds for rejection, the Office Action fails to accord the applicants sufficient due process, as required by Zurko, and fails to provide a prima facie case of obviousness to which the applicants need respond.

For at least the reasons outlined above, applicants respectfully submit that substantially none of the features disclosed are in any way taught, disclosed, or suggested by any disclosure of the '772 patent, in view of the '764 patent. Moreover, for the reasons outlined previously, the Office Action has failed to establish a prima facie case of obviousness. For at least these reasons, applicants respectfully submit that the combination of the '772 patent and the '764 patent fails to render obvious the subject matter of any of claims 1-11, 13-37, and 39-97. Withdrawal of the rejection of claims 1-11, 13-37, and 39-97 as unpatentable over the combination of the '772 patent and the '764 patent under 35 U.S.C. § 103(a) is respectfully solicited.

For at least the reasons outlined above, applicants respectfully submit that the application is in condition for allowance. Favorable consideration and prompt allowance of claims 1-11, 13-37 and 39-97 is respectfully solicited.

Should the Examiner believe anything further is desirable in order to place the application in even better condition for allowance, the Examiner is invited to contact the applicants' undersigned representative at the telephone number listed below.

Respectfully submitted,



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